

CLAIMS

We claim:

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1. A method of cleaning a pressurized container, the method comprising the steps of:
providing a pressurized container containing an amount of anhydrous ammonia
wherein the container has inlet and outlet valves;
injecting a quantity of heated nitrogen gas into the container to form a
nitrogen/anhydrous ammonia mixture; and
venting the nitrogen/anhydrous ammonia mixture to the flare; and
repeating the injection of the container with heated nitrogen gas and venting
10 the mixture to a flare until the concentration of anhydrous ammonia is less than or
equal to about 10,000 ppm.
2. The method of claim 1 further comprising the steps of:
providing a natural gas inlet for feeding natural gas to a burn ring within the
flare;
15 feeding the nitrogen/anhydrous ammonia mixture to the burn ring.
3. The method of claim 1 further comprising the steps of:
providing a blower for flowing air into the flare; and
blowing air into the flare via the blower to aid in the burning of the anhydrous
ammonia.
- 20 4. The method of claim 1 further comprising the steps of:
visually looking for leaks in the container;
providing a housing having a cover on the container having a plurality of
valves therein and a plurality of sideports for access to the interior of the housing;
sampling the interior of the housing via the sideport for a quantity of
25 anhydrous ammonia via a chemical detecting instrument for leaks; and
removing the cover of the housing to inspect the interior of the housing for
leaks.
5. The method of claim 1 further comprising the steps of:
weighing the container; and
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comparing the weight of the container to a tare weight of the container to determine a weight of the anhydrous ammonia therein.

6. The method of claim 1 further comprising the steps of:

providing a nitrogen tank having nitrogen contained therein;

attaching a nitrogen line between the nitrogen tank and a first valve of the container;

heating a portion of the nitrogen line to heat nitrogen contained within the nitrogen line; and

attaching a flare line between the container and the flare.

7. The method of claim 1 further comprising the steps of:

sampling a quantity of anhydrous ammonia in vapor form to determine a concentration of vapor within the container; and

verifying the identity of the anhydrous ammonia within the container.

8. The method of claim 1 wherein the nitrogen gas is heated to between 100°F and 300°F.

9. The method of claim 1 further comprising the steps of:

inspecting the container for leaks via a leak detection apparatus; and

stopping the cleaning of the container if a leak is found having a concentration of at least 50 ppm.

10. The method of claim 1 further comprising the steps of:

injecting the heated nitrogen into the container via a liquid valve on the container; and

venting the gas within the container to the flare via one of the valves.

11. A method of cleaning a pressurized container, the method comprising the steps of:

providing a pressurized container an amount of anhydrous ammonia wherein the container has a plurality of valves;

injecting a quantity of heated nitrogen gas into the container to form a nitrogen/anhydrous ammonia mixture;

venting the nitrogen/anhydrous ammonia mixture to a flare; and

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repeating injecting the container with the heated nitrogen gas and venting the mixture of the flare until the concentration of the anhydrous ammonia is at most about 50 ppm.

12. The method of claim 11 further comprising the steps of:

inspecting the container for leaks.

13. The method of claim 11 further comprising the steps of:

inspecting the container for leaks via a leak detection apparatus; and
stopping the cleaning of the container if a leak is found having a concentration of at least about 50 ppm.

10 14. The method of claim 11 further comprising the steps of:

visually looking for leaks in the container;

providing a housing having a cover and an interior space wherein a plurality of valves are contained within the interior space;

providing at least one sideport in the housing for accessing the interior space of the housing;

sampling the interior of the housing via the sideport for a leak in the plurality of valves via a chemical detection device; and

removing the cover to inspect the interior space of the housing for leaks.

15. The method of claim 11 further comprising the steps of:

weighing the container; and

comparing the weight of the container to a tare weight of the container to determine a weight of the anhydrous ammonia therein.

16. The method of claim 11 further comprising the steps of:

providing a nitrogen tank having nitrogen therein;

attaching a nitrogen line between a nitrogen tank and a first valve of the container;

heating a portion of the nitrogen line to heat nitrogen contained within the nitrogen line; and

attaching a flare line between the container and a flare.

17. The method of claim 11 further comprising the steps of:

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sampling a quantity of anhydrous ammonia contained in the headspace of the container to determine a concentration of the anhydrous ammonia within the headspace.

5 18. The method of claim 11 wherein the nitrogen gas is heated to between 100°F and 300°F.

19. The method of claim 11 further comprising the steps of:

injecting the heated nitrogen into the container via a liquid valve on the container; and

10 venting the nitrogen/anhydrous ammonia mixture within the container to the flare via a vapor valve on the container.

20. The method of claim 11 further comprising the steps of:

injecting the container with steam after the concentration of the anhydrous ammonia therein is about 50 ppm;

removing the pressure plate on the container; and

15 entering the container and cleaning debris from the container.

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